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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,136	03/24/2004	Yutaka Tanaka	740819-1053	2750

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EXAMINER	
ABOAGYE, MICHAEL	

ART UNIT	PAPER NUMBER
1725	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,136	TANAKA ET AL.	
	Examiner	Art Unit	
	Michael Aboagye	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-9* is/are pending in the application.

4a) Of the above claim(s) *1 and 2* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-9* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 3 and 8 are objected to because of the following informalities:

In claim 3, end of line 9, replace "longutidinal" with "longitudinal".

In claim 8, end of line 3, replace "hold" with "holes".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the language calling for "forming cutaways or holes in the weld" recited in claim 8 corresponds to the disclosed invention. Hence the claim is rendered indefinite. With reference to the figure 5, the examiner believes that the holes are formed in the frame but not in the weld.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (applicant's admitted prior art) in view of Dracup et al. (US Patent No. 6,986,452).

AAPA shows a method for fabricating a frame by providing an elongated and curved shaped outer frame member of T-shaped section having an extension extending inwardly; the outer frame member being formed to have an elongate shape and being curved (102, figure 9A), said extension having a top surface, a bottom surface and an inner curved edge, having an inner frame member having a flat portion (the web 106 has a flat portion, figures 9(A&B)) connected to the extension of the outer frame member, the inner frame member being formed to have an elongate shape and being curved in accordance with the shape of the longitudinal direction of the outer frame member, said flat portion having, an upper surface (107, figures 9 (A&B)), a lower surface and an outer curved edge surface and joining the outer frame member and the inner frame member by riveting/fastening; wherein the line of joint connecting the inner and the outer members forms a curve shape (Applicant's specification, page 1, line 17-page 2, line 8, figures (9A&B)). AAPA also has an inner L-shaped section (AAPA, figures (9(A&B)). AAPA also teaches subjecting the outer and the inner frame members to surface treatment or finish coating and assembling the components (see, AAPA figure 10).

AAPA does not expressly teach abutting the inner curved surfaces of the outer frame and the inner frame and joining them together by friction stir welding to form a weld seam along the abutted surfaces.

However Dracup et al. teaches a method of joining an aircraft structural parts by using friction stir instead of riveting in view of the fact that friction stir welding is a more viable and cost reducing alternative to riveting (Dracup et al., abstract, column 1, line 65-column 2, line 14 and figures 5-9). Dracup et al. in figures 25-30 show friction stir welding two or more elongated plates (51, 52, 52) with surface abutted against each other without overlapping surfaces (see, Dracup et al., column 11, lines 38-44).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to weld the components of AAPA by using friction stir welding as taught Dracup et al. since friction stir welding is a more viable and cost reducing alternative to riveting also the overall weight of the structure can comparatively be reduced (Dracup et al., column 1, lines 14-23 and lines 57-67).

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (applicant's admitted prior art) in view of Dracup et al. (US Patent No. 6,986,452) as applied to claim 3 above and further in view of Litwinski et al. (US Patent No. 6,780,525).

AAPA and Dracup et al. combined teaches subjecting the outer and the inner frame members to surface treatment or finish coating prior but not after friction stir welding the members.

Litwinski et al. teaches subjection friction stir welded structural member/s to post weld treatment process including, solution heat treatment, precipitate hardening, annealing and surface peening to control post weld degradation of the material properties of the members (Litwinski et al., column 2, lines 21-26 and lines 40-60; figures 5A, 6A, 7, and 8). Litwinski et al. also teaches friction stir welding two components in surface abutment relationship with each other without overlapping surfaces (Litwinski et al., figures 5A, 6A). Litwinski et al. also teaches pre or post machining of the members to a predetermined shape (Litwinski et al., column 5, line 66-column 6, line 16).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to conduct post weld treatment of the members in the combined inventions of AAPA and Dracup et al. in order to minimize degradation of the material properties of the members after welding (Litwinski et al., column 2, lines 21-26 and lines 40-60).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (applicant's admitted prior art) in view of Dracup et al. (US Patent No. 6,986,452) as applied to claim 3 above and further in view of Myer (US Patent No. 4,278,863).

AAPA and Dracup et al. do not expressly teach forming a cutaways or holes in the frame.

Myer teaches welding components to form a large structure, forming a plurality of holes or cutouts (44A figures 3 and 4) in the individual components with the purpose of

reducing the overall weight of the components after assembled (Myers, abstract, column 5, lines 43-50 and figures 3 and 4).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to form forming a plurality of holes or cutouts (44A figures 3 and 4) in the frames used in the combined invention of AAPA and Dracup et al. as taught by Myers to reduce the overall weight of the components after assembled (Myers, abstract, column 5, lines 43-50).

Response to Arguments

8. The examiner acknowledges the applicants' amendment received by USPTO on August 17, 2007. Claims 1 and 2 have been withdrawn; claims 3-9 remain under consideration in the application.

9. Applicant's arguments with respect to claims 3-6 have considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on 571-272-1177. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JONATHAN JOHNSON
PRIMARY EXAMINER

Michael Aboagye
Assistant Examiner
Art Unit 1725
09/03/2007

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